



zukunft haus

Energie sparen. Wert gewinnen.

Contracting – Instrument for energy efficiency in official real estates

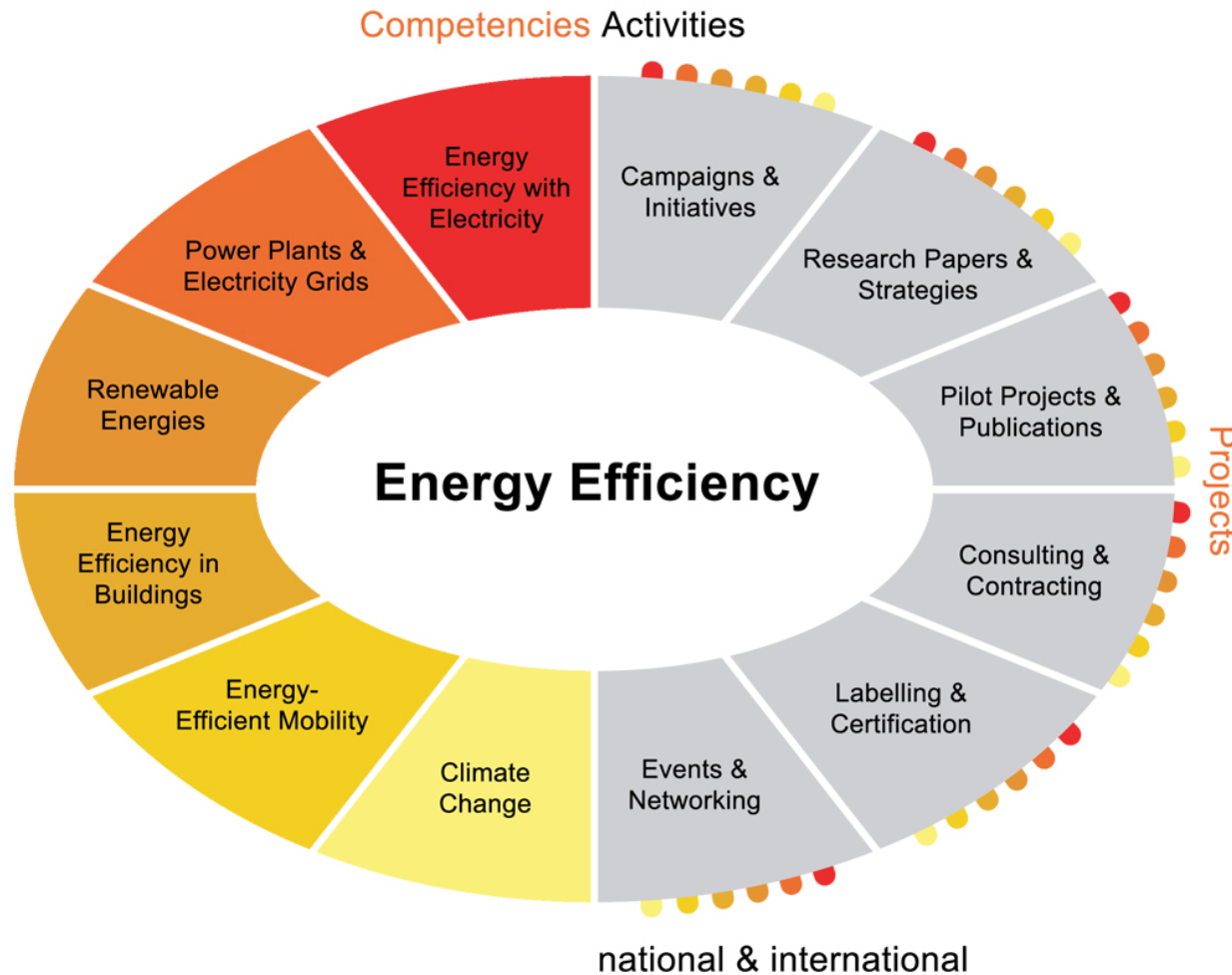
Dipl.- Ing. Romy Reichenberger
Berlin, May 24, 2005

► The Deutsche Energie-Agentur GmbH (German Energy Agency GmbH - dena)

- **dena was established in the fall of 2000**
- **Shareholders:**
 - **The Federal Ministry of Germany (50%), represented by:**
 - **The Federal Ministry of Economics and Labour (BMWA)**
 - **The Federal Ministry of Transport, Building and Housing (BMVBS)**
 - **The Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU)**
 - **KfW Banking Group (50%)**
- **Business objective: Promotion of Energy Efficiency and Renewable Energies**
- **Number of Employees: at present 75**
- **Management: Stephan Kohler**

- Wolfgang Clement, Federal Minister for Economics and Labour
(Supervisory Board Chairman)
- Detlef Leinberger, Managing Director, KfW Bankengruppe
(Deputy Chairman of the Supervisory Board)
- Manfred Stolpe, Federal Minister for Transport, Building and Housing
- Jürgen Trittin, Federal Minister for the Environment, Nature Conservation and Nuclear Safety
- Dr. Tessen von Heydebreck, Member of the Group Board of Deutsche Bank AG
- Wolfgang Kroh, Managing Director, KfW Bankengruppe

► Fields of Competence and Activity



► Energy Efficiency in Buildings Projects (Overview)

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Brand Name

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Project

**Energy
passport
for buildings
/ EnEV**

Project

**Low Energy
House
in Existing
Buildings**

Project

Contracting

Campaign

**Solar heat
Initiative –
Solarwärme
Plus**

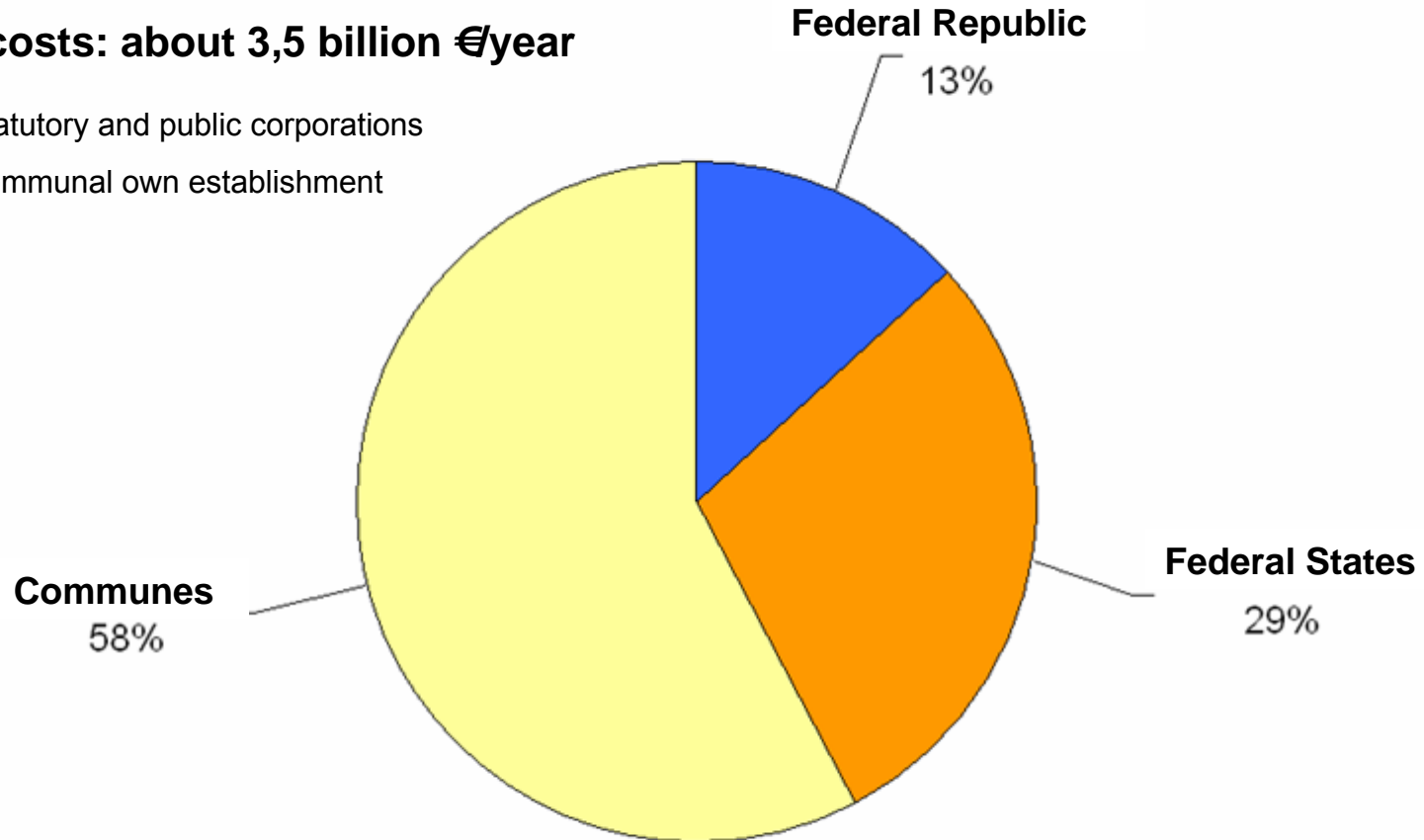
**Inter-
national
Projects**

► Why Contracting ?

► Energy costs in official estates

energy costs: about 3,5 billion €/year

- without statutory and public corporations
- without communal own establishment



Source: Umweltbundesamt, 2000 and own calculations

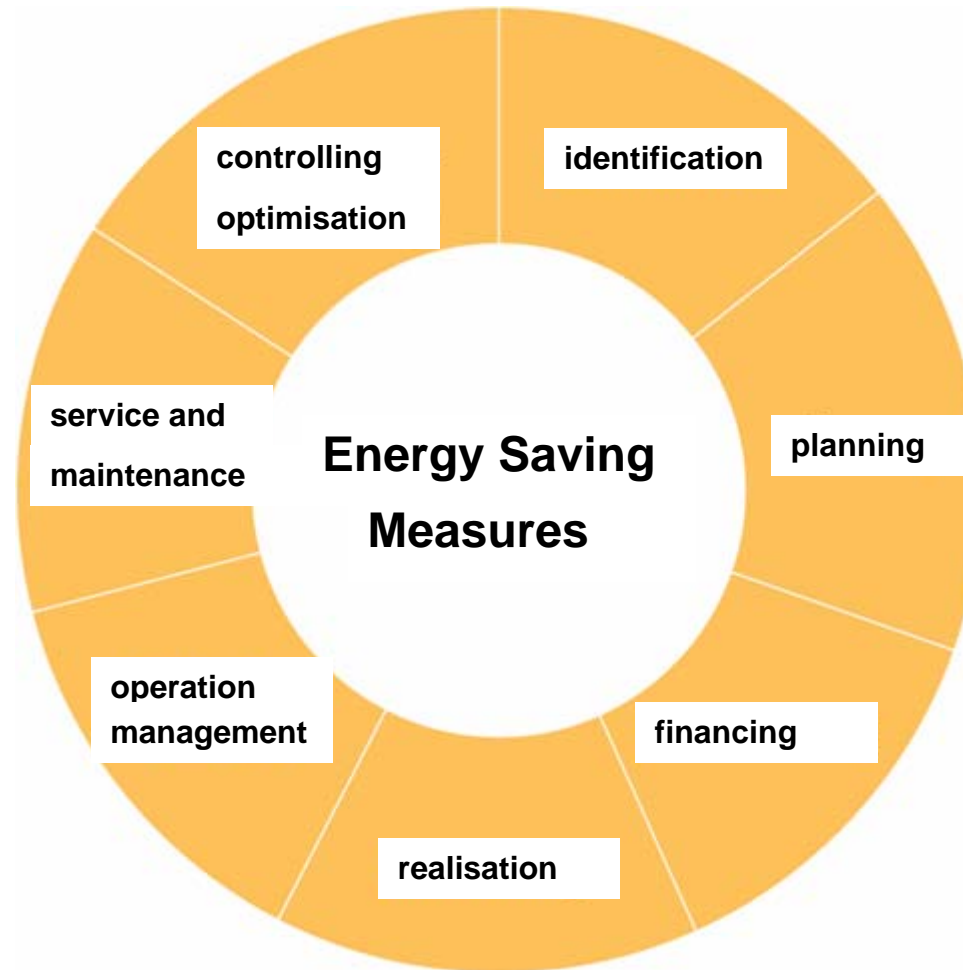
► Actual situation

- Tense situation considering the budget
- Termination of investments, less renovation and modernisation of technical equipment
- No incentives in order to save on energy
- Technical equipment is not used efficiently
- Deficit in energy management

➡ *High energy consumption in official real estates*

➡ *10 – 30 % economic potential for energy saving*

► Contracting as method of resolution

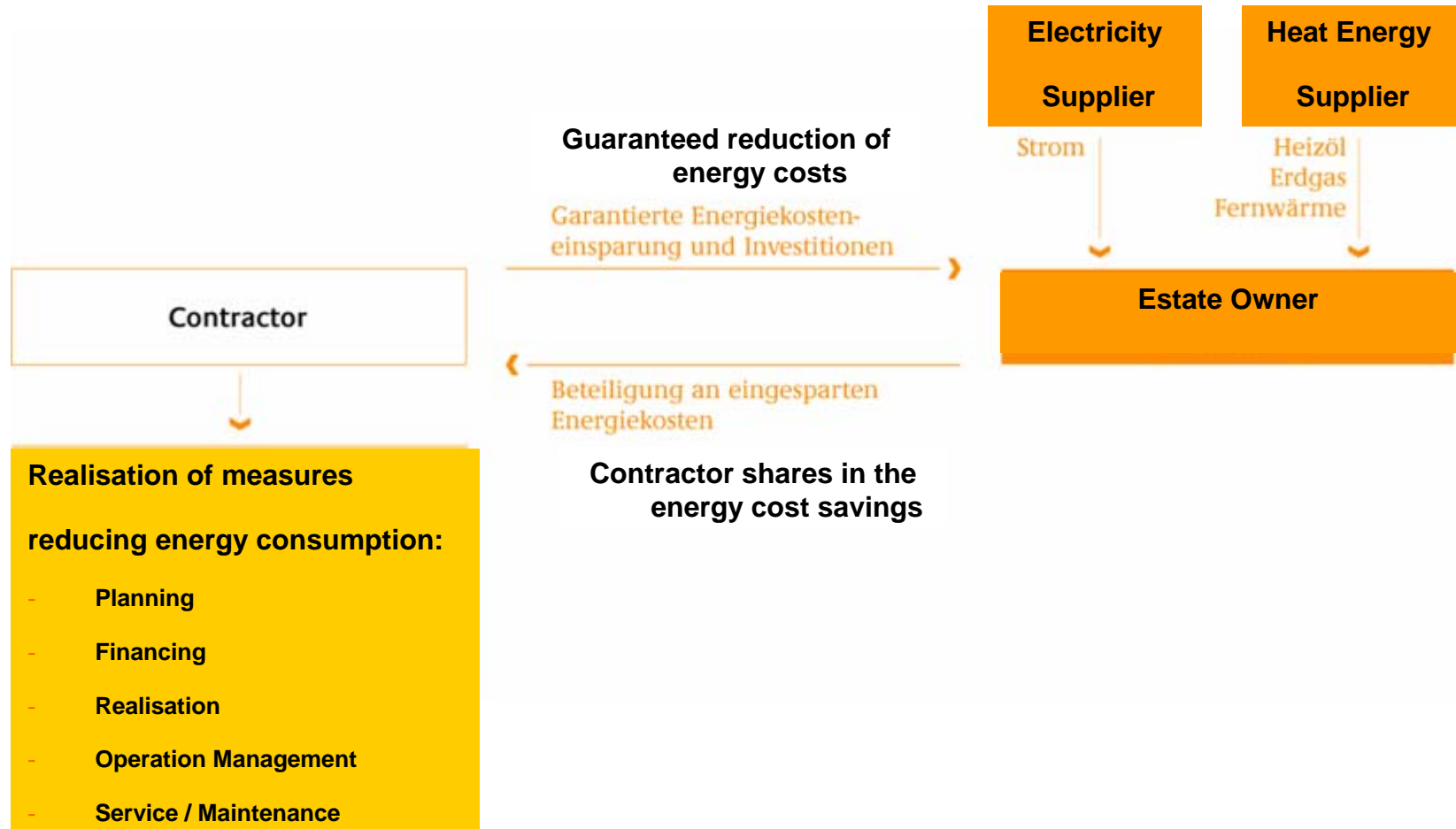


► Prospects of Contracting

- **Budget relief, no use of own funds**
- **Organizational relief**
- **Outsourcing of risks (investment, technology, conservation success)**
- **Use of the contractor's specialization benefits**
- **Initiation of competition (ideas, know-how, financing)**
- **Preservation of value of buildings**
- **Energy conservation, reduction of CO₂ emissions**

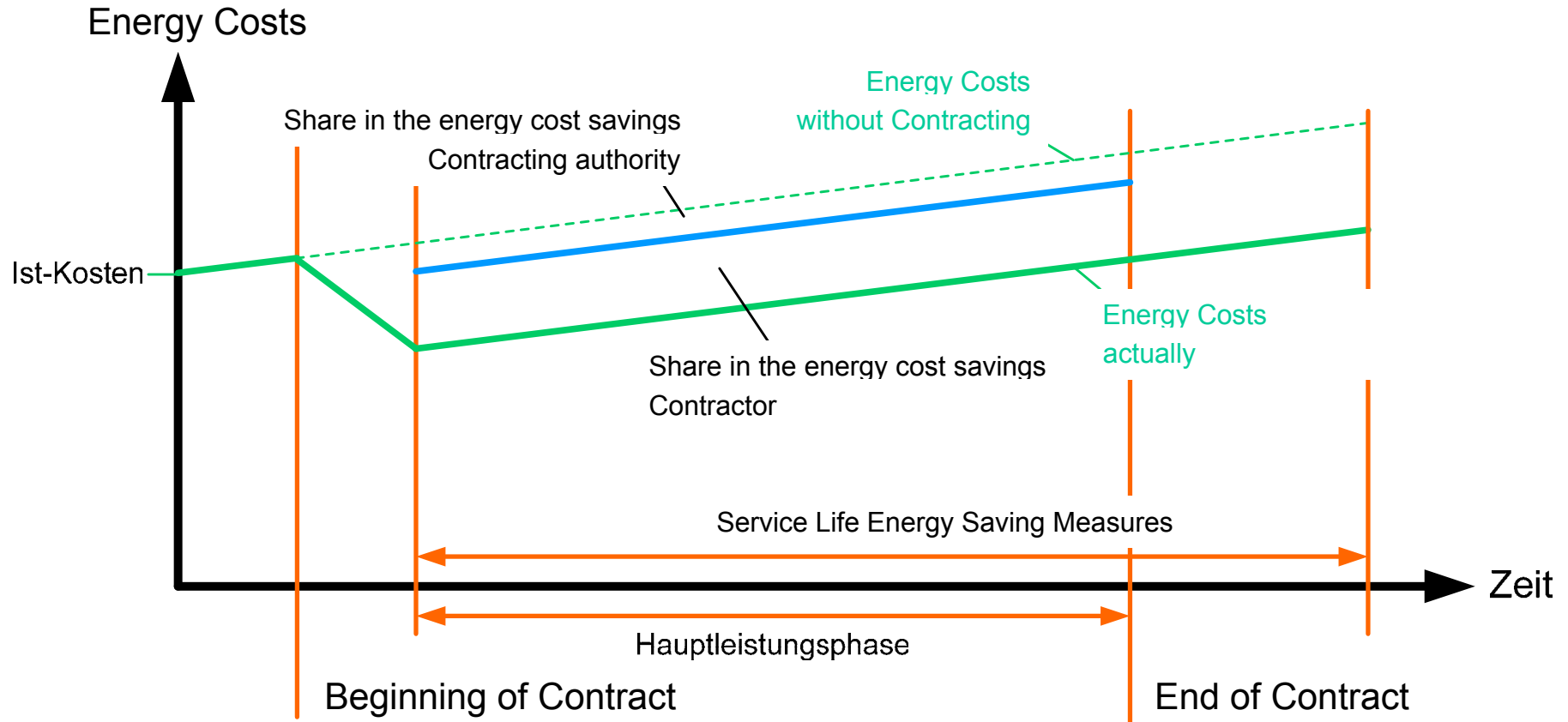
► Energy Conservation Contracting

- an instrument to optimize energy supplies



► Modell of financing

Contractors Payment results from fixe reference prices!



▶ **Guaranteed Services by the Contractor**

- **Reduction of energy costs**
- **Contracting authority shares in the energy cost savings**
- **Investment in energy conservation measures (extent and structure)**
- **Introduction and/or optimization of energy control system**
- **Maintenance of the installed systems**
- **Observance of specified comfort standards**
- **Annual documentation and invoicing**

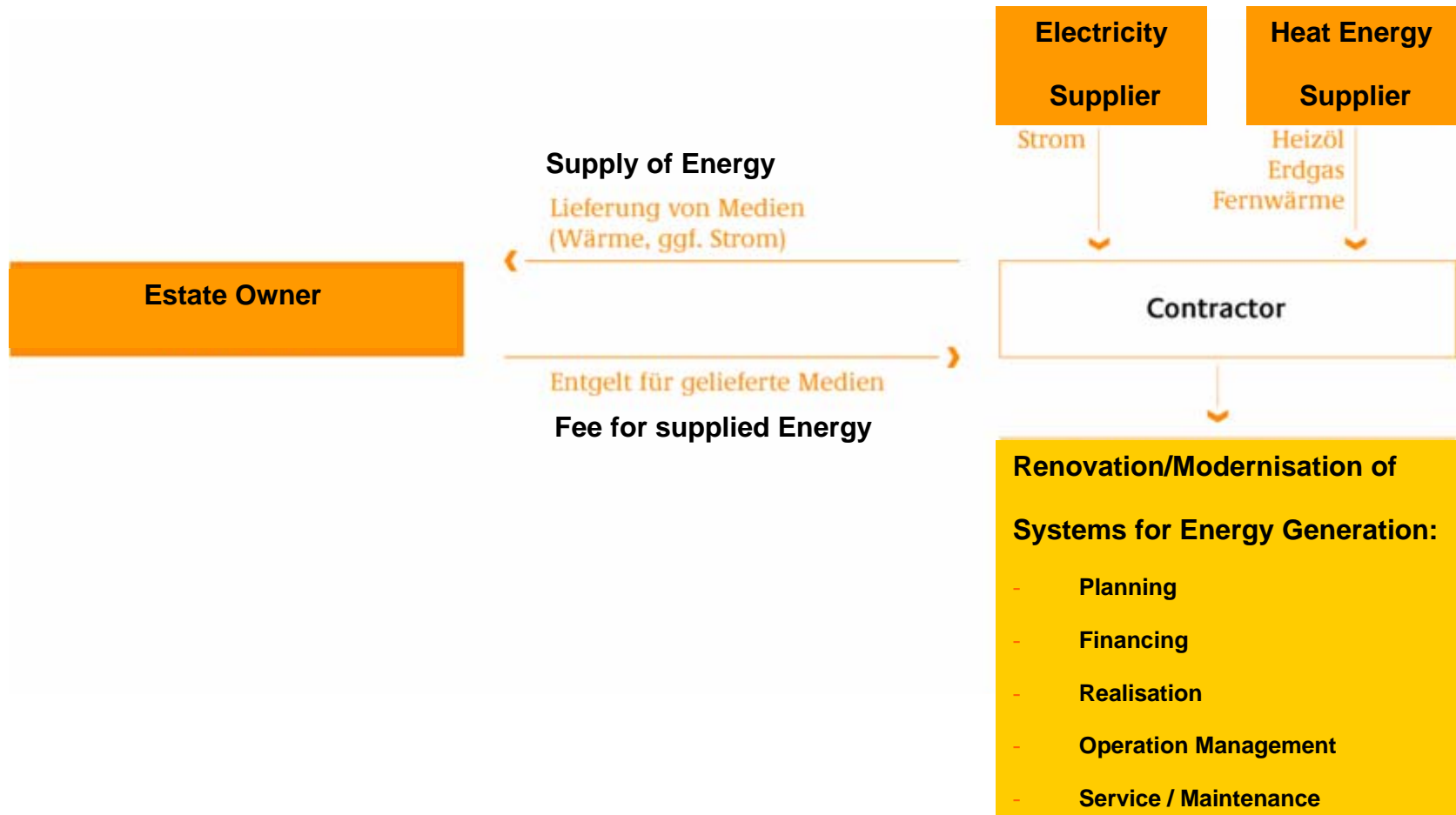


Contract with independent guarantee

► Typical Optimisation Measures

- Largely technical and operational optimizations that finance themselves over the course of the contract term through energy cost savings
- Replacement and/or optimization of technologies for monitoring and control technologies
- Introduction and/or optimization of building master-control systems and continuous energy control through long-distance monitoring
- Hydraulic balance of distribution systems (heating, ventilation systems)
- Use of rpm-controlled circulation pumps and ventilators
- Heat recovery in the ventilation systems
- Optimized lighting technology
- Cold and steam: optimized production, storage, distribution
- Thermal protection measures are normally not carried out since they cannot finance themselves over the course of the contract term

► Energy Supply Contracting



► Pilot Project “Contracting for Federal Buildings”

- **Voluntary commitment by the federal government**
 - October 2000 decision by federal government as part of National Climate Protection Program
 - CO₂ emissions by federally owned buildings are to be reduced by 25% by 2005 and by 30% by 2010, relative to 1990 level
 - Federal ministries draw up their own reduction program: “Nationale Strategie für eine Nachhaltige Entwicklung“ (National Strategy for Sustainable Development)
- **National Strategy for Sustainable Development**
 - Decision by the federal government of April 17, 2002
 - Pilot project "Contracting for Federal Buildings"
 - Project objectives: sparking off a surge in demand, serving as model, budget-neutral modernization of federal buildings, contribution to voluntary commitment.

- **Project realization by the German Energy-Agency GmbH (dena)**
 - Project guidance and coordination
 - Technical advice for agencies that administer the buildings and for the government construction authorities
 - dena does not appear as the vendor of contracting services
- **Focus of activities**
 - Further development of tender instruments (model contracts, model tender texts)
 - Clarification of budget statutes regarding handling of contracting (payments estimates, commitment authorizations)
 - Selection and offering of suitable federal buildings for contracting projects

► Contracting Projects at present

Nr.	Projekt	Bundesland	Liegenschaften	Energiekosten	Contr.-Modell	Projektstatus
1	Grenzschutzpräsidium Mitte, Fuldatal	HE	1	260.000 €	ESC	Hauptleistungsphase
2	Zollkriminalamt, Köln	NW	1	410.000 €	ESC	Vorbereitungsphase
3	Bundesforschungsanstalt für Ernährung und Lebensmittel, Kiel	SH	1	550.000 €	ESC	Angebotsverhandlungen
4	Bundesanstalt für Wasserbau, Karlsruhe	BW	1	340.000 €	ESC	Vertragsverhandlungen
5	Pool Hamburg	HH	3	690.000 €	ESC	Vertragsverhandlungen
6	Pool Rhein-Main-Gebiet	HE / RP	3	865.000 €	ESC	Feinanalyse
7	Pool Berlin-Potsdam	BE / BB	4	940.000 €	ESC	Vertragsverhandlungen
8	Pool Bundeswehr, Hamburg	HH	2	1.045.000 €	ESC	Angebotsverhandlungen
9	Standort Kulturforum, Berlin	BE	6	2.465.000 €	ESC	Angebotsphase
10	Deutsches Patent- und Markenamt, München	BY	1	635.000 €	ESC	Start: 2. Quartal 2005
11	Pool München	BY	3	515.000 €	ESC	Start: 2. Quartal 2005
12	Bundesinstitut für Risikobewertung, Berlin	BE	1	155.000 €	ESC	Start: 2. Quartal 2005
13	Wehrbereichsverwaltung West, Düsseldorf	NW	1	570.000 €	ESC	Start: 3. Quartal 2005
14	Pool Rheinland-Pfalz	RP	3	510.000 €	ESC	Start: 3. Quartal 2005
15	Bundesamt für Verfassungsschutz	NW	1	1.060.000 €	ESC	Start: 4. Quartal 2005
16	Bundesanstalt für Straßenwesen, Bergisch-Gladbach	NW	1	405.000 €	ESC	Start: 2. Quartal 2005
Summe			33	11.415.000 €		

ESC: Energy Saving Contracting, Energy costs net

Status: 06.05.2005

- **Results after successful realization of actual or planned „Energy Saving Contracting Projects“ (33 federal real estates):**
 - **Energy Saving Guarantee Energy Costs: a total of 2,7 Mio. €/year net (24%)**
 - **Directly budgetary relief Federal State: a total of 570.000 €/year net**
 - **Guaranteed investments: about 11,9 Mio. € net**
 - **Reduction of CO₂-Emissions: a total of 14.700 t/year**
- **Outfitting with block-type thermal power station (BHKW) in many projects important measures to reduce energy consumption**
- **Full Potential for Contracting in Federal States is not tapped until now**

► Border Patrol Presidium - Central District - in Fuldata (1)



- **Use:**
 - administration
 - housing
 - workshops
 - aircraft hangars
- **Number of buildings: 25**
- **52.000 m² total area**
- **Energy needs for 2002:**
 - approx. 5.000 MWh/a natural gas
 - approx. 1.000 MWh/a electricity
- **Energy costs: 260.000 €/a**
- **Short-distance heating**

- **Tender**
 - Publication of announcement of tender: January 2004
 - Signing of contract: July 2004
- **Project results**
 - contract partner: Siemens Building Technologies
 - contract term: 10 years
 - guaranteed energy cost-savings of some 77.000 €net (approx. 30%)
 - contracting authority's share: roughly 15.000 €net (approx. 19%)
 - guaranteed investments of roughly 270.000 €net
 - reduction of CO₂ emissions of 535 t/year (-27%)
 - planned energy conservation measures:
 - outfitting with block-type thermal power station (110 kW_{el}, heat conducted)
 - optimization of the control and operation of the heat plant
 - hydraulic optimization of the short-distance heat-transport lines
 - replacement of lighting fixtures and methods in various buildings
 - optimization of the ventilation units in the helicopter hangars
 - optimization of existing building master-control systems

Further informationen:

- ▶ www.zukunft-haus.info/contracting
www.contractingoffensive.de

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